

“Just because I can’t speak doesn’t mean I don’t have anything to say...”




Food for thought...

“When given the choice of answering the math fact of the day or falling off the chair, the brain will usually put its energy into staying on the chair.”

-- Dale Gardner-Fox, MS. RPT

Why use single switch technology?


- To provide our students with ways of actively participating in *meaningful* activities.
 - Communication
 - Literacy
 - Recreation



Issues to consider when Integrating Technology into the Classroom:

- **Student**
 - Abilities? Limitations? Goals?
- **Environment**
 - Supportive? Realistic Expectations? What's available? Identify barriers and work around them.
- **Tasks**
 - Support curricular goals? How can the task be modified?
- **Technology**
 - No Tech, Low Tech and High Tech


(Joy Zabala)



Motivation


- Humans have an inborn drive to
 - Understand
 - Be Independent
 - Connect Socially
- Daily failures in attempts to fulfill this drive lead to "learned helplessness"

Linda Burkhart




Our Mission

- Provide our students with ways of actively participating in meaningful activities.
- It's a team effort!!



"Motor Impairment and Learned Helplessness"


- Hand-over-Hand
 - What YOU think does matter
 - Consider Hand-*under*-Hand
- Passive participation
- Who's really doing it??
- Importance of Repetition
 - BUT with moderate differences



The Access Hierarchy

- **Direct Selection**
 - Access techniques where the individual directly activates the desired equipment. Generally, it is the fastest and easiest control method.
- **Indirect Selection-Switch Activated Scanning**
 - The user activates single or multiple switches to choose among selection possibilities presented in groups or one at a time. Scanning requires fewer motor movements, but greater timed motor responses than direct selection. Scanning also requires higher cognitive and attending skills than direct selection.

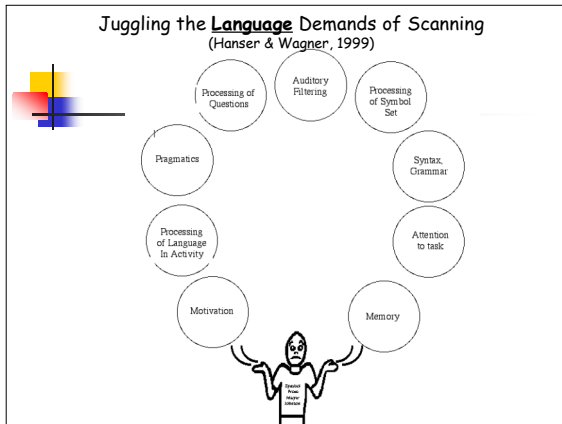
(Gretchen Hanser)

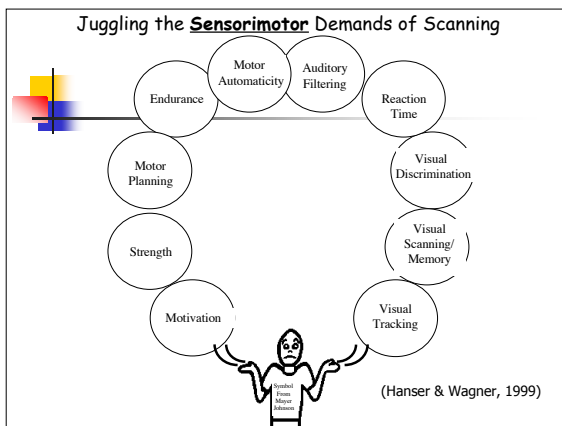


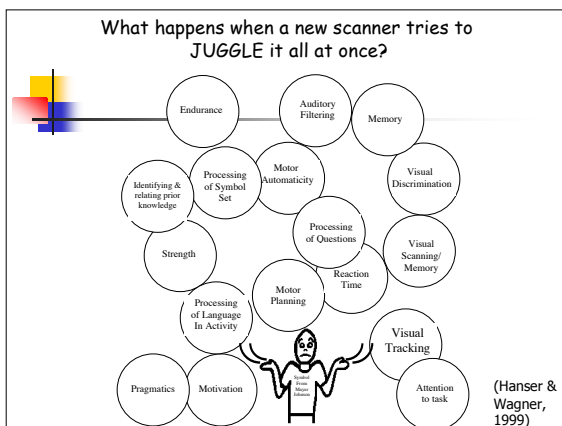
Hit the Switch!!

- Jelly Bean
- Plate Switch
- Spec Switch
- Any others??

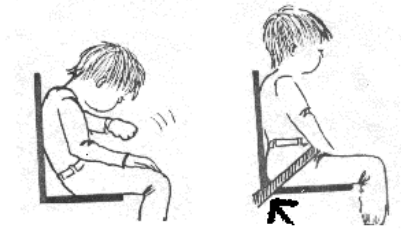
Be careful about the language you use when working with a Switch user!







Pelvic Stability improves posture




Considerations when introducing a switch to a student

- Positioning
- Accessibility of switch
 - Hand, head, foot, elbow, knee, etc.
- Motor vs. Cognitive demands
- Consistency
 - Motor pathways
- Opportunities for Exploration and Practice
 - 200-400 switch hits a day needed for mastery!!

How did you learn to:


- Do puzzles?
- Ride a bike?
- Write?
- Type?
- Drive?
- Dance?
- Play an instrument?



How many Switch-hits per day do your switch users get?

200-400
switch hits per day is required for mastery!?!?!?


How can we get more hits in?



Therapeutic Switch use:


For a student with POOR head control what will be easier????

- Using a head switch to increase head control
 - ? Switch use with a motivating activity.
- Using a hand switch?
 - ? Switch use with easier access for a more cognitively demanding activity.




AAC Devices as single switches

- Step-by-Step
- BigMack




Types of switches

- Binder and WebCT Resources



Switch Considerations

- Size of switch
- Force Requirements
- Travel/Displacement
- Flexibility
- Durability
- Sensory Feedback
- Physical Features



Make it Meaningful

Connect to:

Curriculum
and Recreation Activities

Characteristics of Activities that Support the Development of Access:

- Motivating and Authentic activities
- Daily, Consistent Access
- Activities in Natural Environments
- Repetition, but with a Variety of Activities and Tools
- Be Aware of the Language/Academic demands during heavy motor activities
- Allow for exploration.

If it's fun for our *kids*...
it's probably more fun for *us*
too!



Don't Walk Away From That Walking Toy!

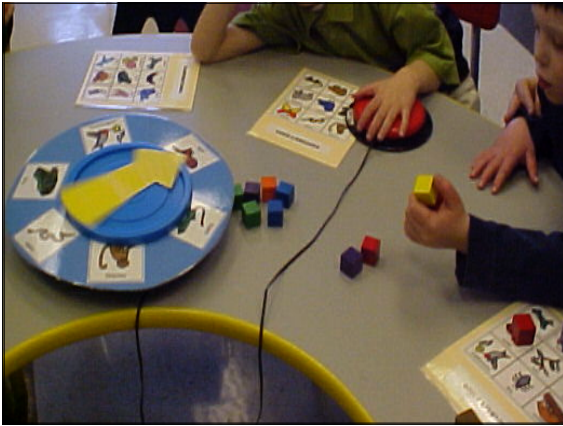



Moving Toys with a Purpose



"Low-Tech" Curriculum Adaptations








Ideas for the classroom...

- Social Scripts using the Step-by-Step
 - Pranks
 - Ordering Lunch
 - Giving directions for an activity
 - Sharing stories about the day
- Switch Toys
 - Carry a snack
 - Walk to a number/letter/picture
- Switch Adapted Spinner
 - Dramatic Play
 - Art Activities
 - Games



Other Tools

- Battery Operated Potter's Wheel
- Battery Operated Fans
- Battery Operated Bubble Blowers
- Battery Operated Scissors
- Moving Toys/Bump and Go Toys

VERY Helpful Tool for Battery
Operated Items:
Switch Latch & Timer Box



From Ablenet, www.ablenetinc.com


Introducing switch scanning through
Partner Assisted Scanning



- Can be used with:
 - AAC devices
 - Content specific information
- Single Message Device Confirmation
- No Tech Device Confirmation
- Flashlight
- Eye Gaze

Could you practice scanning
with this?






The Motor & Cognitive Demands of the Different Scan Modes

- Automatic Scanning
- 2 Switch Scanning
- Inverse Scanning

(Gretchen Hanser)




Scan Mode

(The way the switch is used to start, stop & maintain the scan)

- **Automatic Scanning**-The user activates and releases the switch to start the scan and then waits while each item is presented. When the desired item is indicated, the user activates the switch again to make the selection. Requires specific reaction time.
- **2 Switch Step Scanning**-The switch is activated and re-activated to indicate each target item. Has to hit 2 switches repeatedly, but with no reaction time demands from device.
- **Inverse Scanning**-The user maintains switch activation while the items are presented and releases the switch when the desired item is reached. Specific reaction time needed to release switch.


(Gretchen Hanser)



Physical Considerations:

- Positioning: posture/stability
- Work range-dimensions & position
- Accuracy of response
- Speed of response
 - reflex involvement/tonal changes
- Endurance
- What else is the student doing?
 - head position
 - visual system
 - excess movement of other extremities

(Gretchen Hanser)




Examples of Scan Patterns

(The movement of the scan indicator-visual or auditory)

- Linear
- Row-Column
- Column-Row
- Block/Group


(Gretchen Hanser)



Scan Indicator Feedback

- Visual
 - Color Highlight or Border
- Auditory
 - Beep or Click
 - Message Cue

(Gretchen Hanser)



Scan Rate

- The speed at which the scan indicator moves across the item choices. It is usually adjustable to accommodate the user's needs.

(Gretchen Hanser)



Assistive Technology

- Ultimately...

...it's not about the "technology"

...it's about our students.
